What benefits applicable to human health have come out of the seven regional primate research centers since their establishment in the 1960s?

What are the medical, moral, scientific, and ethical implications of past, current and future experimentation involving nonhuman primates?

Liberation Collective • 1998 • Portland

Arguments Against the Use of Nonhuman Animals in Biomedical and Scientific Experimentation

CRAIG ROSEBRAUGH

Liberation Collective

is an all volunteer, non profit organization dedicated to linking social justice movements to end all oppression. Based in Portland, Oregon, Liberation Collective works on a variety of human, environmental, and animal liberation issues both locally and on a national basis. The organization was created out of a growing concern of arbitrary walls being built between various groups and movements working for positive social change.

This is a collective. What this means is that individuals have the ability to use their talent, energy, and desire to create positive social change in an atmosphere of cooperative effort. Liberation Collective consists of individuals both locally and across the country - individuals with compassion and a drive for social justice - who are involved to actually make a difference. Social change and an end to the incredible amount of human created oppression is not going to occur on its own. By becoming involved individuals are making that change a reality.

GET ACTIVE!

Liberation Collective is always searching for innovative, creative individuals to aid in the struggle for peace and justice. Volunteers are needed for a variety of current and ongoing activities. The movement against oppression begins in each and every one of our hearts and minds. It is for this reason we encourage everyone to get involved and use their individualized interests and skills to help make this dream of universal freedom a reality.

Positive education and social change can be accomplished using a variety of creative and effective methods. Liberation Collective therefore engages in a variety of educational activities. From letter writing to teaching, from protesting to civil disobedience, only a universal approach to activism will result in an outcome of actual change. Liberation Collective supports non-violent direct action and the individuals who engage in such activity.

For more information on Liberation Collective and how you can become involved in your local area contact:

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if not you, who? if not now, when?

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INTRODUCTION

Early in 1997, in association with the West Coast Conference on the Use of Animals in Biomedical and Scientific Experimentation, I met an individual who had a vision. I recall coming down the stairs inside my home one afternoon to find him sitting on my couch mingling with my housemates and other guests. Having opened up our house to those attending the conference I figured this individual was just another attendee who had come from out of town.

Meeting him for the first time, the individual explained to me how he was an eighth grade teacher from a rural Oregon town. He had recently made statewide news when he was put on administrative leave from his position as a result of having a rule in his classroom that kids couldn't kill bugs. Staring at his shaggy, 1960's appearance of simplicity, I couldn't help but wonder if he were just another crackpot animal lover that the media loved to incorrectly portray and exploit as someone caring more for the rights of animals than humans. The conference began and ended and I wondered if I had seen the last of this person.

In the next month or so, I received a letter followed by a phone call from this same individual who claimed he had a plan that he wanted to accomplish. He had been so moved and disgusted at the information he received at this conference and another that he had to do something about it. Expressing an interest in the topic of primate experimentation, he came up with the idea that he wanted to travel around the country and sit in front of the seven regional primate research centers. By doing this, he said he would be bearing witness to the atrocities committed every day with taxdollars in United States institutions.

My first response in remembering who this guy was turned into the form of questions in my mind. *The guy from some small town who got in trouble for not letting kids kill bugs in his classroom wants to go sit in front of the primate center?. He wants to just sit there?* In our correspondence, he asked for any help that our

Nature of Wellness Foundation. (1997, February). Why animal research is a medical and scientific fraud. Scientific American. P. 27.

New England Regional Primate Research Center. (1998). [WWW document]. Retrieved: http://www.hms.harvard.edu/nerprc/.

Oregon Regional Primate Research Center. (1998). [WWW document]. Retrieved: http://www.ohsu.edu/orprc/.

Quinn, D. (1992). Ishamel; An adventure of the mind and spirit. New York: Bantam.

Reusch, H. (1979). Vivisection is scientific fraud. Los Angeles: Civis.

Reusch, H. (1983). Slaughter of the innocent. New York: Civitas Publications.

Robinson, V. (1946). Victory over pain. A history of anesthesia. New York: Henry Schuman.

Silverstein, H. (1996). Unleashing rights; Law, meaning, and the animal rights movement. Ann Arbor: The University of Michigan Press.

Singer, P. (1980, March). The significance of animal suffering. Behavioral and Brain Sciences. Pp. 9-12.

Spiegel, M. (1988). The dreaded comparison; human and animal slavery. Philadelphia: New Society Publishers.

Washington Regional Primate Research Center. (1998). [WWW document]. Retrieved: http://www.rprc.washington.edu/.

Wisconsin Regional Primate Research Center. (1998). [WWW document]. Retrieved: http://www.primate.wisc.edu/.

Yerkes Regional Primate Research Center. (1998). [WWW document]. Retrieved: http://www.cc.emory.edu/WHSC/YERKES/.

REFERENCES CITED

Americans for Medical Progress. (1998). [WWW document]. Retrieved: http://www.amprogress.org/.

Animal Welfare Information Center. (1998). [WWW document]. Retrieved: http://netvet.wustl.edu/org/awic/law/usda/p199198.htm.

Barron, M. (1920). Relations of the islets of Langerhans to diabetes with a special reference to cases of pancreatic lithiasis. Surgery, Gynecology, and Obstetrics, XXXI, Nov. 5. pp. 437-438.

Blum, D. (1994). The monkey wars. New York: Oxford University Press.

Boland, F. K. (1950). The first anesthetic: The story of Crawford Long. Athens: University of Georgia Press.

Carmen, R. (1990). The illusions of animal rights. Wisconsin: Krause Publications.

Cohen, C. (1986, October). The case for the use of animals in biomedical research. The New England Journal of Medicine. pp. 865-869.

Coleman, V. (1991). Why animal experiments must stop and how you can stop them. England: European Medical Journal.

Fadali, M. A. (1996). Animal experimentation; A harvest of shame. Los Angeles: Hidden Springs Press.

Favre, D. S. & Loring, M. (1983). Animal law. Connecticut: Quorum Books.

Fox, M. A. (1986). The case for animal experimentation; An evolutionary and ethical perspective. Berkeley: University of California Press.

Hardinge, K. (1983). Hip replacement, The facts. Oxford: Oxford University Press.

Leavitt, E. S. & Halverson, D. (1990). The evolution of anti-cruelty laws in the United States. In Animal Welfare Institute (Ed.), Animals and their legal rights; A survey of American laws from 1641-1990 (pp. 1-47). Washington D.C.: Animal Welfare Institute.

National Institutes of Health (1998). [WWW document]. Retrieved gopher://gopher.nih.gov/11/res/crisp.

organization in Portland might be able to give. After thinking about it for a short time, I agreed to help him as much as I could. I figured if he was going to sit at these places by himself, the least I could do was help him. Neither of us realized what that agreement would ultimately mean.

In late May, 1997, this one individual took his place in a lawn chair outside the Oregon Regional Primate Research Center in Beaverton. Armed only with his tent, rain gear and table containing information on primate experimentation, he began a nine day non-stop vigil and a national tour helping to re-ignite the anti-vivisectionist movement in the United States.

At five of the seven locations I accompanied this individual as he maintained his vigil and increased his determination. My duties included food supply, event coordinating, interior jail cell inspecting, media exposure, and more. The response was incredible. All around the country people of all ages and from all walks of life came out to see and meet the man sitting in protest in front of the primate centers. It brought the issue of primate experimentation back into the media spotlight around the country and into the hearts and minds of the American public.

Having been involved and studying the issue of animal experimentation for eight years at the time of this writing, never before have I been so hopeful that the public will soon realize the atrocities committed with animal research. One major goal of the 1997 tour was to promote asking two questions to the medical and scientific establishment, *what benefits have come out of the seven primate research centers since their establishment in the 1960s? What are the medical, moral, ethical, and scientific implications of past, current, and future experimentation involving nonhuman primates?* To these two questions I have yet to see a response or even a consideration from the medical industry.

In this work I have sought to promote the same questions with public education as a primary goal. It is my firm belief that no matter what one's opinion is on the matter of using nonhuman animals in experimentation, everyone should feel the inclination to question the effectiveness of something the public is paying for that clearly has

questionable results. I am asking that the reader have the courage to step back from the everyday institutionalized trust placed in societal experts to obtain an objective view of this issue. Only when the scientific and medical industry is made to answer to an ever increasingly questioning public will this issue begin to be resolved. As with any issue, a major part of the battle is education.

Next year, during the summer of 1999, I will join this individual once again in addition to thousands of others across the country, for a second tour guaranteed to pose a major challenge to the research establishment. This twenty-one city tour is expected to be the most significant event in the history of the movement against animal research in the United States. It is an invitation to see just how far and to where an individual's questions can lead.

be excepted on the grounds that it is saving human lives Clearly it is not.

If the public were to be informed of the scientific and medical fraud in addition to the cruelty continuing to be involved with nonhuman animal research, there would be no sign of tolerance. As our mothers and fathers, sisters, brothers, friends, and others continue to suffer from illnesses such as heart disease, AIDS, cancer, and more, this becomes an issue of immediate importance. Only when the scientific and medical industry takes the incredible amount of money wasted on animal research each year and redirects it into prevention and clinical studies, will there be any justice and progress in the field.

CONCLUSION

After eight years of involvement with the issue of animal experimentation I have come to some obvious and not so obvious realizations. For one, the public at large is kept completely in the dark on the issue of animal experimentation. The research industry has worked hard to make sure that the taxpaying public know only what scarce and censored information that is released by the pro-vivisection community. A clear example of this is the physical location of many of the research centers. In Oregon, while across the street from the primate center, people have actually stopped and asked why we were protesting against animal research at that location. They had to be informed that there were over 2,200 primates down the unmarked drive. The Southborough center, run by Harvard, is hidden in the same manner, on a secure compound out of the public eye and scrutiny.

Another realization I have come to is that due to public ignorance and lack of access to the experimentation, little serious opposition has come historically to animal research in the United States. Indeed there have been times when the issue was growing as a matter of national concern, but up until recently the movement has not proved to be much of a threat to the establishment.

I have also come to the conclusion that the hidden and mysterious nature of animal research and those who are engaged in it relies on the implicit trust of the public in societal experts. *The man in the white lab coat told me...so it must be true.* While I am not advocating placing no trust whatsoever in various societal experts, including doctors and scientists, a clear objective view on all issues is needed.

If the United States as a nation is going to be bold enough to realize that its citizens need to act towards one another with equal consideration and respect, and extend that humanity to nonhuman animals in the form of anti-cruelty statutes, then how much more readily apparent must the hypocrisy be regarding the exclusions for animals in experimentation? It is widely held that individuals shouldn't act cruelly or inhumanely toward animals. Yet, severe cruelty, torture, and death to animals in scientific and medical research is supposed to

NONHUMAN PRIMATE EXPERIMENTATION IN THE UNITED STATES

Although many different species of animals are used each year in medical and scientific experimentation in the United States, there is a growing movement focused primarily on abolishing the practice of using the various nonhuman primate species. This is largely due to the belief that it is getting to the heart of the issue of animal research. If the public at large is skeptical that all animal research is needed and relevant, it becomes easier to point to studies on animals who bear no physical resemblance at all to humans as examples of resource waste. The public may then feel that the only real animal model exists in various primate species who share a larger amount of physical and biological makeup with humans. Therefore, if it can be decided upon that nonhuman primate based experimentation is not only unethical and immoral, but also medically and scientifically invalid, that will be the end of all animal research. If the primates were the best model in the eye of the public, what justification would exist for using cats, dogs, rabbits, mice, birds, cows, rats, etc., in experimentation?

In this section, primate experimentation in the United States will be discussed, focusing largely on the seven federally funded primate research facilities. It is an attempt to associate the reader with the location, and size of each facility in addition to the massive amount of resources that are poured into them. Samples and brief summaries of current research conducted at each site will be given to give a perspective on the work that goes on nationally in this system.

There are seven regional primate research centers in the United States funded by the National Institutes of Health. Each facility has a host university connected that assists in operations from administrative roles to publicity. The seven centers with their host institutions include; Washington Regional Primate Research Center/University of Washington; Oregon Regional Primate Research Center/Oregon

Health & Sciences University; California Regional Primate Research Center/University of California at Davis; Wisconsin Regional Primate Research Center/University of Wisconsin at Madison; Yerkes Regional Primate Research Center/Emory University; New England Regional Primate Research Center/Harvard University; Tulane Regional Primate Research Center/Tulane University.

The Oregon Regional Primate Research Center (ORPRC) is located in Beaverton, Oregon, inside the Portland metropolitan area. Opening in 1962, ORPRC was the first of the seven centers in the country. According to the ORPRC website, its mission was to provide "an institution where scientists from various disciplines could conduct investigations and train others in health-related basic research using nonhuman primates" (ORPRC, 1998, WWW).

Over 2,200 primates exist at ORPRC including macaques, capuchins, and other species. With an on site breeding colony, the Oregon Center is largest supplier of rhesus monkeys for research in the United States. The 1997 base grant for ORPRC was $7,133,463 with an additional $7,506,807 going to individual researchers for a combined total of $14,640,270. This funding is given directly to ORPRC by the National Center for Research Resources (NCRR) funneled originally from the taxpaying public through the National Institutes of Health (NIH).

The Washington Regional Primate Research Center (WaRPRC) is located on the campus of the University of Washington in Seattle. WaRPRC states online that its mission is "to conduct biomedical research on primates, with special emphasis in neurological sciences, cardiovascular function, disease models, developmental biology, endocrinology and metabolism, AIDS, immunogenetics, and virology" (WaRPRC, 1988, WWW).

With 1,800 primates on site in addition to another 1,400 macaques at a breeding facility on Tinjil Island in Indonesia, WaRPRC is the third largest of the seven centers. WaRPRC received $9,178,813 as a base grant in 1997 combined with an additional $25,542,841 going to individual researchers for a total publicly funded revenue of $34,721,654.

The third regional center on the West Coast is the California

National Institutes of Health released in 1998 by the National Research Council/Institute for Laboratory Research, attempts to do just that, explain how to provide for the psychological well-being of nonhuman primates. The irony here is that the authors of the publication have documented histories of invasive and unquestionably cruel experimentation using nonhuman primates.

Enforcement of the Animal Welfare Act is extremely problematic. No provisions exist under this Act for citizen enforcement or citizen civil suites, which leaves the enforcement in the hands of the Department of Agriculture. Under the U.S.D.A., an organization called the Animal and Plant Health Inspection Service (APHIS) has been in charge of inspections until 1988. A new division was then created which is referred to as the Regulatory Enforcement and Animal Care (REAC). In 1990, REAC had a mere 63 inspectors for the entire country who were to inspect some 1,296 laboratories, 4,415 dealers, 1,504 exhibitors, 282 intermediate handlers, and 145 carriers (Leavitt & Halverson, 1990, p. 83).

An interesting observation that comes from an overview of U.S. animal law, as was briefly touched upon in this section, is the fact that all these different laws exist in attempt to protect various sorts of animals from cruelty. Yet there are clear exclusions to these laws, especially in the case of animals used in scientific and medical experimentation, which lead one to wonder about the thought process of the country with respect to animals as a whole.

research, and mice and rats. It should be noted that mice and rats, although exempt from coverage, constitute the majority of the millions of animals used in experiments each year (Leavitt & Halverson, 1990).

The Animal Welfare Act was first passed in 1966 and at that time loosely covered animal dealers as well as scientific institutions. The Act has since been amended by Congress in 1970, 1976, and most recently in 1985. Yet, the 1985 amendments have yet to be completely put into effect due to pressure from the pro-animal research community.

The 1966 Act set the standards for the humane treatment of dogs, cats, primates, rabbits, hamsters, and guinea pigs used in experimentation. The 1970 amendment broadened the field of coverage to all other animals used in laboratory experiments, except those previously listed which are excluded by law. At this time the Secretary of Agriculture set the standards for humane care. The Act required veterinary care including "appropriate use of anesthetic, analgesic, and tranquilizing drugs" (Leavitt & Halverson, 1990, p. 77).

In 1976, the amendment to the act placed research facilities into the same category as dealers and exhibitors in regards to the ability to be fined for violations. It also covered "transportation of animals used for research, exhibition, the pet trade, by common carriers and intermediate handlers" (1990). The amendments in 1985 related largely to the specifics of such issues as annual inspections, an increase in the severity for offenders, and general laboratory animal care (Animal Welfare Information Center, 1998, WWW).

The 1985 Act further defines humane treatment referring to specifics such as sanitation, housing, and ventilation. In addition, the Act called on the Secretary of Agriculture to provide exercise for dogs and "an adequate physical environment to promote the psychological well-being of nonhuman primates" (Animal Welfare Information Center, 1998, WWW). This certain clause included in the 1985 amendment, although seemingly positive, has yet to be fully enforced by the Department of Agriculture. The U.S.D.A. has yet to come up with a precise definition of what it actually means to provide for the psychological well-being of primates. Yet, a report funded by the

Regional Primate Research Center (CRPRC) located at the University of California in Davis. CRPRC keeps over 3,300 primates combined of five species on site. It is the second largest center in the country.

In 1997, CRPRC received $7,766,045 as a base grant in addition to another $9,061,712 which went to individual researchers. These two combined for a total of $16,827,757 in 1997 alone.

The smallest center in the country, in relation to primate population, is the New England Regional Primate Research Center (NERPRC). It has posted on its webpage that the mission of NERPRC is to,

> ~Conduct basic and applied biomedical research requiring the use of nonhuman primates aimed at the solution of human health and societal problems;
> ~Study the biology of nonhuman primate species to enhance their scientific utility, health and well-being;
> ~Serve as a regional resource to the biomedical community enabling investigators from other institutions to conduct all or part of their research at the Center; and
> ~Train young scientists in biomedical research and primatology (NERPRC, 1998, WWW).

Located in Southborough, Massachusetts, NERPRC first opened in 1962. The center currently has a research staff of "59 doctoral level scientists and 105 technical and support staff" (NERPRC, 1998, WWW). Over 1,400 primates exist on site at NERPRC.

The base grant from NCRR to NERPRC in 1997 was $8,107,305 with an additional $3,937,706 awarded to individual researchers. These two combined for a total of $12,045,011.

In Atlanta, Georgia sits the Yerkes Regional Primate Research Center (YRPRC). The center, which opened in 1965, states that its mission is, "1) to conduct research focused on selected areas relevant to human health for which the primate is the appropriate animal model; and 2) to provide a major research support program composed of teams of specialists responsible for delivering high quality animal care and ensuring the humane treatment of Yerkes animals as well as providing a healthy, stable source of primates" (YRPRC, 1998,

WWW).

The primate colony at Yerkes consists of over 3,000 monkeys and apes. It is the only NIH primate center with common chimpanzees, orangutans, bonobos, and gorillas. Some 14 species make up the total colony on site at Yerkes.

Yerkes, in 1997, received $5,662,807 as a base grant and another $8,715,374 for individual researchers. These two amounts combined make for a total of $14,378,181 given to YRPRC in 1997 by the NCRR.

The Wisconsin Regional Primate Research Center (WRPRC) is located on the campus of the University of Wisconsin in Madison. Its mission as printed on the WRPRC website is to "to pursue applicable knowledge at the molecular, cellular, systemic, whole animal and environmental levels, including work in conservation biology" (WRPRC, 1998, WWW).

In 1997, WRPRC received a base grant of $5,839,166 and another $7,246,519 went to individual researchers for a combined total of $13,085,685.

Last, but certainly not least, is the Tulane Regional Primate Research Center (TRPRC), which is the largest of the seven centers in primate population size. Located in Covington, Louisiana, TRPRC contains over 4,000 primates consisting of eleven different species including rhesus macaques, African green monkeys, patas monkeys, pigtail macaques, longtail macaques, squirrel monkeys, owl monkeys, sooty mangabies, baboons, and more.

The Tulane Center received a base grant of $5,260,811 in 1997 with an added $3,543,605 awarded to individual researchers. They combined for a grand total of $8,804,416 awarded to TRPRC by the NCRR that year.

To give the reader some insight into the types of experimentation conducted at each site, it is useful to summarize a few current projects at each of the centers. The following information comes from the CRISP (Computer Retrieved Information on Scientific Projects) database run by the National Institutes of Health.

At the Oregon Primate Center, a researcher by the name of

tion, and those used in the entertainment industry such as but not limited to rodeos and circus'.

The minute governance concerning scientific and medical procedures using animals comes from the Animal Welfare Act. Research facilities including any school (above secondary level), institution, or organization that uses live animals in research, testing, or experiments, and that either purchases or transports live animals in commerce or receives funds from the federal government for research, testing, or experimentation, are covered by this act. Under the act research institutions are held to standards of humane care. The Act, although not detailing the exact standards of care, does present various subjects that must be addressed.

> Such standards shall include minimum requirements with respect to handling, housing, feeding, watering, sanitation, ventilation, shelter from extremes of weather and temperatures, adequate veterinary care, including the appropriate use of anesthetic, analgesic or tranquilizing drugs, when such use would be proper in the opinion of the attending veterinarian of such research facilities, and separation by species when the Secretary finds such separation necessary for the humane handling, care, or treatment of animals (Favre & Loring, 1983).

The Animal Welfare Act obviously does not cover all areas of animal use within a medical or scientific procedure. Specifically excluded from the Act are the actual guidelines for the research projects themselves. This is for the simple reason that there exist very little. A researcher in an institution can literally do anything to an animal as long as the research protocol has been approved by the Institutional Animal Care and Use Committee (IACUC) of the particular facility. IACUC's are generally made up of peer researchers, with a seat usually open for a veterinarian and a layperson. Naturally, the conclusion can be drawn that since the IACUC's are made up largely of researchers themselves, protocols are rarely rejected.

Also not covered in the Act are birds, farm animals used in

sustenance, cruelly beats, mutilates or cruelly kills, or causes or procures such cruel treatment of any animal, or who, having the charge of or custody of any animal as owner, or otherwise inflicts cruelty upon the animal, shall, upon conviction, be guilty of a Class B misdemeanor.

(3) Every owner or person having the charge or custody of any animal, who cruelly drives or works the animal when unfit for labor, or cruelly abandons the animal, or carries or causes the animal to be carried in or upon any vehicle or otherwise, in a cruel, inhumane manner, or knowingly or willfully authorizes or permits the animal to be subjected to torture, suffering or cruelty of any kind, shall be punished for each and every offense in the manner provided in subsection (2) of this section.

(4) Except in the case of an emergency, every owner or person having the charge or custody of any animal, who deprives such animal of necessary and adequate food and drink for more than 36 hours, shall be punished for each and every offense in the manner provided for in subsection (2) of this section.

[Penalty: Up to 6 months' imprisonment and/or a fine of up to $1,000 (161.615, 161.635).] (Leavitt & Halverson, 1990, pp. 37-38).

Section 1 of ORS 167.850 clearly states that cruelty towards animals is illegal unless otherwise permitted by law. This statement is largely referring to various industries which claim to use animals for human benefit. A few examples would be the use of animals in medical and scientific procedures, animals raised for food consump-

Judy L. Cameron monitors effects of fasting and re-feeding on testosterone production in male rhesus macaques and creates stress-induced suppression of reproductive function in crab-eating macaques. Another researcher at ORPRC, Michael G. Gravett, induces birth prematurely in chronically instrumented pregnant rhesus macaques through experimental intrauterine infections. [Chronic instrumentation is the term used when monitoring devices are permanently surgically implanted. Typically, monkeys used in this manner are permanently tethered and housed in isolation.] Martha Neuringer, also with ORPRC, deprives infant rhesus macaques of key nutrients and studies the results such as chronic diarrhea and neural impairment. A last example from ORPRC comes from Miles Novy who is engaged in physiological studies of unanesthetized chronically catheterized maternal-fetal preparations (pregnant baboons and rhesus macaques) in mobile tether assemblies.

At the Washington Primate Center, Douglas, M. Bowden has surgically installed cranial implants in monkeys and is testing to see whether macaques (particular species not mentioned) will learn quicker with a reward of direct electrical stimulation to the medial dorsal nucleus of the thalamus. Another researcher at WaRPRC, Marjorie E. Anderson, has discovered, in her attempt to understand brain chemical interactions, that tubing which is surgically embedded in a monkey's brain (species undisclosed) may cause localized paralysis. Virginia M. Gunderson is learning how to bolt the heads of three month-old baby monkeys into a restraint device and inject chemicals into their brains to induce seizures. Other than getting to learn a new technique, she is asking whether seizures might interfere with later neurobehavioral development in an undisclosed species of monkey. Russell Ross, also with WaRPRC, is feeding some undisclosed species of monkey high cholesterol diets for two years to induce arterial lesions. He is then further damaging the arteries through angioplasty. He comments that similar studies conducted on rats have little relevance little to humans. Just prior to killing his monkeys he examines them with MRI.

David M. Amaral, a researcher with the California Primate Center, damaged various parts of monkey's brains, then observes

how they interact with other monkeys. Charles A. Fuller, also with CRPRC locks rhesus monkeys into a cyclotron and spins them for months to create an environment with twice the normal gravitational force. Prior to being locked into this spinning prison cell he surgically implants telemetry which allows him to, "record PTS , video, temperature, heart rate, activity and drinking continuously, as well as to collect urine, from rhesus individually housed on this centrifuge" (NIH, 1998, WWW). PTS is the psychomotor test system developed at the University of Georgia Language Research Center.

At the New England Center, David H. Adams is transplanting pig kidneys and hearts into baboons. All have failed within 96 hours or less. Another researcher at NERPRC, Ole Isacson, is using a neurotoxin to destroy selected areas of monkeys' brains in an effort to mimic the symptoms of Alzheimer's disease. Ole also is inducing Huntington's disease-like and Parkinson's disease-like symptoms in monkeys by creating brain lesions. He is trying to cure the damage by transplanting fetal brain cells. John Assad is surgically attaching permanent head restrain bolts to rhesus macaques in order to keep them still while he records motor/visual from electrodes implanted in their brains. Geoff Akita, also with NERPRC, is attempting to implant foreign genes into rhesus macaques through their lungs by placing them in a restraint chair and having them inhale an aerosol concoction for three hours at a time, twice a week, for twelve weeks before he kills them to examine their lungs, livers, and kidneys.

At Yerkes in Atlanta, Richard W. Compans is trying to figure out whether some SIV strains enter through the vaginal mucus barrier in rhesus macaques more easily than others. He believes this will have bearing on how an entirely different retrovirus, HIV-1, passes through the vaginal mucus barrier of an entirely different species, humans. James G. Herndon has made the remarkable discovery that eight rhesus monkeys of advanced age (25 to 27 years of age) did not have as good a memory as five young adult animals (5 to 7 years of age). Also at Yerkes, Leonard L. Howell has discovered that monkeys (of some species) will self-administer caffeine orally and intravenously at similar dosages. He intends to give these monkeys various drugs to see which drugs will affect caffeine usage. Thomas C. Pearson is

and water. With a few exceptions, most of these states allow a citizen to enter if an animal has not received food and water within a twelve hour time period. The owner of the neglected animals is subject to penalty of varying degree, commonly some form of a misdemeanor (Leavitt & Halverson, 1990).

Each state has its own anti-cruelty statutes with regard to animals. For the sake of simplicity, one example will serve as a basis on which an understanding of the anti-cruelty laws in general might be based.

OREGON

167.850. Definition and classification of the crime of cruelty to animals.

(1) A person commits the crime of cruelty to animals if, except as otherwise authorized by law, he intentionally or recklessly:

(a) Subjects any animal under human custody or control to cruel mistreatment; or

(b) Subjects any animal under his custody or control to cruel neglect; or

(c) Kills without legal privilege any animal under the custody or control of another.

(2) As used in this section, 'animal' includes birds.

(3) Cruelty to animals is a Class B misdemeanor.

167.860. Specific acts defined as cruelty to animals; defense; exceptions.

(1) As used in this section, 'animal' means any mammal, bird, reptile, or amphibian.

(2) Any person who overdrives, overloads, drives when overloaded, overworks, tortures, torments, deprives of necessary

only progressive but enforceable. His first law, passed in 1866, was a revision of the 1828 law which added protection to disabled horses and mules from abandonment. One year later, Bergh created "An Act for the more effective prevention of cruelty to animals" (1990, p.5). Forty-one states and the District of Columbia have since used this act as the example on which new anti-cruelty laws have been passed.

Currently in the fifty states, the District of Columbia, American Samoa, the Canal Zone, Guam, the Virgin Islands, and the Commonwealth of Puerto Rico, there is some agreement on animal protection. Animals are generally thought of as having the right to "1) protection from cruel treatment such as described in detail in Section 1 of Henry Bergh's 1867 law, 2) protection from abandonment; 3) protection from poisoning; and 4) the provision of food, water, and shelter" (Leavitt & Halverson, 1990, p. 7). Twenty-two states specifically exclude protection for animals used in scientific and medical experiments. In Utah for example, the state statute specifically allows for painful research and painful husbandry practices,

> It is a defense to the prosecution under this section that the conduct of the actor towards the animal was an accepted veterinary practice or directly related to a *bona fide* experimentation for scientific research provided that if the animal is to be destroyed, the manner employed will not be unnecessarily cruel unless directly necessary to the veterinary purpose of scientific research involved [Section 76-9-301] (p. 8).

This particular exclusion of laboratory animals is worthy of noting here as it will be referred to later in this section.

In most states, the District of Columbia, Puerto Rico, the Canal Zone, and Guam, failing to provide food, water, and shelter to an animal is prohibited. Close to twenty states prohibit the depriving an animal of "necessary sustenance" (p. 9) which may include proper exercise, sanitary living conditions, veterinary care, and wholesome food.

Some twelve states, in addition to Guam, permit a citizen to enter the premises where an animal has been confined without food

cutting out kidneys and switching them between rhesus monkeys. He does this in pairs. One monkey receives an experimental anti-rejection drug that delays inevitable kidney failure, but the other monkey receives no such protection and is doomed to die as a sacrifice.

In Madison at the Wisconsin Center, E. I. Terasawa studies the effects of brain disruptions on the onset of puberty in rhesus macaques. Gary W. Kraemer studies the various effects of removing rhesus macaque infants from their mothers. Also at WRPRC, Mary L. Schneider examines effects of alcohol exposure in rhesus macaques.

Finally, at the Tulane Center, Dennis J. Grab studies the arthritis caused by experimentally induced Lyme disease in rhesus macaques, sleeping sickness (Trypanosoma brucei), and is working on a new mosquito repellent. Michael C. Henson is experimenting with interfering with hormone levels in pregnant baboons. James A. Roberts studies kidney infection caused by the E. coli bacteria in crab eating macaques. Also at Tulane, Jackeline Alger is involved with primate malaria studies.

The above examples represent only a minute percentage of the research conducted at each site. In addition, the seven centers, while they represent the largest concentrated area of primate experimentation in the United States, do not represent all primate research. There are a great number of institutions, both publicly and privately funded, outside of the seven centers that continue to use primates in research. Research abstracts for the seven centers and other publicly funded animal experimentation can be found online at: gopher://gopher.nih.gov/11/res/crisp.

THE MEDICAL AND SCIENTIFIC ARGUMENTS AGAINST NONHUMAN ANIMAL EXPERIMENTATION

It is an effort to push aside the emotional veil that blinds people to the corrupt ideology presented by animal rights leaders. The animal rights groups depend on the collective ignorance of the American people, not their collective knowledge. It is a movement that thrives in the darkness of ignorance.
~ Russ Carmen discussing his book,
The Illusions of Animal Rights, (1990, p. 73).

A recent paper published in the British Medical Journal showed that four out of every ten patients who take a prescribed drug can expect to suffer severe or noticeable side effects, while numerous clinical observers agree that the incidence of iatrogenesis (medically induced disease) is now so great that approximately one in every ten hospital beds is occupied by a patient who has been made ill by their doctor. If a patient has two diseases these days it is a pretty fair bet that the second disease will have been caused by the treatment for the first.
~ Dr. Vernon Coleman in his book,
Why Animal Experiments Must Stop, (1991, pp. 48-49).

One of the most commonly held perceptions regarding animal experimentation is that it is needed for the development of vaccines, cures, and remedies for human illness. Proponents ask the important question of what will happen to AIDS (Acquired Immune Deficiency Syndrome), Cancer, and Heart Disease research, to name a few examples, if animal experimentation is completely stopped. Will the

In 1822, Richard Martin, a British M.P. commonly thought of as the founder of animal law, introduced the first anti-cruelty legislation in England. It was labeled the Martin's Act and was designed to prevent cruelty to cattle (Silverstein, 1996).

In the United States, the first anti-cruelty law was enacted in 1828 by the New York State Legislature. Limited to owned horses, cattle, and/or sheep, the law states,

> Sec. 26. Every person who shall maliciously kill, maim, or wound any horse, ox, or other cattle, or sheep, belonging to another, or shall, maliciously and cruelly beat or torture any such animal, whether belonging to himself or another, shall upon conviction, be adjudged guilty of a misdemeanor (Leavitt & Halverson, 1990, p. 2).

Massachusetts in 1835 adopted anti-cruelty legislation similar to that enacted in New York. The difference was in the Massachusetts penalty which designated the misdemeanor punishable "by imprisonment in the county jail, not more than one year, or by fine not exceeding one hundred dollars" (p. 3).

In the 1800's, a total of 48 states enacted their first anti-cruelty laws, with Alaska and Arizona following in the early 1900's respectfully. "The laws passed in the late 1800s ate the core of today's cruelty legislation" (Favre & Loring, 1983, p. 122).

Idaho, in 1864, introduced and passed a companion animal law, which was the first to protect domestic animals from poisoning. In Sec. 142 of this legislation, the law aimed to impose a penalty on any person "who shall willfully administer any poison to any cattle or domestic animal or maliciously expose any poisonous substance, with the intent that the same shall be taken or swallowed by cattle or domestic animal" (Leavitt & Halverson, 1990, p. 4).

Henry Bergh, founder of the American Society for the Prevention of Cruelty to Animals, became actively involved in creating and promoting legislation against animal cruelty. Frustrated at the lack of enforcement of existing cruelty laws, such as the New York law passed in 1828, Bergh sought to draft new laws which would be not

many forces working to both create and regulate existing and proposed animal welfare legislation. Thus, animal law is a reflection of a human v. human conflict where in this case other species are affected.

This section will begin by taking a historic look at animal egislation in order to gain a perspective for current and proposed egulations affecting the use of nonhuman animals. Next, current Jnited States animal law will be explored with special attention paid o non-human animals used in scientific and medical experimentation.

Contrary to popular belief, America enacted the first statutory egislation designed to protect animals from cruel treatment. "The 3ody of Liberties" created by the Puritans of the Massachusetts Bay Colony in 1641, listed 100 liberties expected "to be impartialle and nviolably enjoyed and observed throughout our Jurisdiction for ever" Leavitt & Halverson, 1990, p. 1). The table of contents lists: "Lib-rty 92. Cruelty to animals forbidden". Liberty 92 was reprinted in he book Animals and Their Legal Rights,

> 92 No man shall exercise any Tirranny or Crueltie towards any bruite Creature which are usuallie kept for man's use.
>
> 93 If any man shall have occasion to leade or drive Cattel from place to place that is far of, so that they be weary, or hungry, or fall sick, or lambe, It shall be lawful to rest or refresh them, for a competent time, in any open place that is not Corne, meadow, or inclosed for some peculiar use (1990, p. 1).

.iberty 92 and 93 represent not only the first anti-cruelty law, but also he first law designed to protect animals in transit.

In addition to these liberties, it was possible to prosecute ndividuals under common law for instances of cruelty. This was ccomplished by charging offenders with committing nuisances. In Villiam Shultz's book, The Humane Movement in the United States 1922), an example is given, "A cartman in Philadelphia has been ndicted and found guilty of cruelly beating his horse and sentenced to ay a fine of $30 with costs of prosecution and to give bond for his ood behavior for one year" (p. 12).

progress in cures or remedies for these types of illnesses also come to a halt?

Growing up in Western cultures, particularly the United States, the public is given experts in various fields on which various levels of trust are based. There are police officers that in theory enforce societal law, court systems that further enforce law and decide who has and has not committed a criminal act, and attorneys who defend those who are charged with breaking the law. Each of these societal determined experts has a specific role to play and thus a certain amount of trust is associated with each role. The police officer is trusted, again in theory, to uphold the law and to look out for the safety and well being of individuals in society. The court systems were designed supposedly to provide a basis on which the innocent could be separated from the guilty who then would be sentenced to some form of punishment. Attorneys are then seen as experts of the law, who can hypothetically be trusted to see that matters within the law are taken care of properly.

In the medical and scientific field with relation to the human body, the experts here include a range of doctors specializing in everything from neuroscience to injuries in the feet. There seem to be specialists for every part and function of the human body. Individuals in society are taught from day one that what the people in the white lab coats say must be taken as truth without question. It is this trust that makes what is known as the health care system in the United States operate. Individuals who are ill go to a doctor who will after an examination prescribe proper remedies for the sickness. Often these remedies will include pharmaceuticals with foreign names to which a large potion of the public are ignorant. If one is in need of emergency care there is a great amount of trust involved in this process. There may be foreign substances, fluids, or drugs pumped into an individual without one even realizing until a later time. Be this positive or negative, my point is to simply state that it is the very trust in these experts that allows the system as a whole to continue to operate.

When the issue of nonhuman animal experimentation comes into the picture, much of the public will immediately think negatively of those questioning its medical and ethical validity due to the nature of

trust placed in the experts of the health care system. These experts, especially of large government funded institutions, have historically taken a pro-animal research stance claiming that it is needed to further human health. Thus, public perception overall has been for at least some animal experimentation based on the implicit trust in doctors who say that it is needed.

But what happens when the public begins to discover that perhaps some of the animal research is in fact invalid, cruel, and wasteful? If some experiments on animals are deemed a waste, just what percentage of animal research is beneficial? How is the public supposed to find the answers to these questions?

There is a growing movement of health care professionals including doctors, scientists and educated members of the public who are opposed to nonhuman animal based experimentation on specifically medical and scientific grounds. Current organizations such as The Nature of Wellness Foundation, Medical Research Modernization Committee, and the Physicians Committee for Responsible Medicine work toward the abolition of animal research using a scientific and medical argument. Some of the pioneering books in this area of thought came from Hans Reusch in his 1978 book, Slaughter of the Innocent, his 1982 book, Naked Empress, and his 1989 book, 1000 Doctors Against Vivisection. In these books, Reusch argues that not only is animal research based on a false premise, that results obtained through animal experimentation can be applied to the human body, but also has been and continues to be very costly to human health.

The most famous example is that of the Thalidomide tragedy in the 1960s and 1970s. Reusch writes, "The Thalidomide case is to date by far the best known, the most widely advertised tragedy of modern therapeutics. But public opinion has been led to believe that it represents an exceptional case. This is not so. Rather than being exceptional, the Thalidomide case is typical" (1983, p. 359). Thalidomide, which came out on the market late in the 1950s in Germany, had previously been safety tested on thousands of animals. It was marketed as a wonderful sedative for pregnant mothers or for those breastfeeding since it supposedly caused no harm to either mother or child. By 1961, the German company Grunenthal who first created

ANIMAL LAW AND ITS RELATION TO THE USE OF ANIMALS IN UNITED STATES EXPERIMENTATION

The concept of animal law is a particularly interesting one due to its exploration of one species perceived control and domination over others. The arbitrary line of division separating humans from all other animals continues to set standards for governing control. This control is demonstrated in numerous examples which describe human attitudes pertaining to other species. Many of these attitudes, at times, bear a striking resemblance to those which existed and were used historically to justify the discrimination of people based on race, sex, religion, sexual orientation, etc. The attitudes are further discussed in the previous section on ethics and morality.

Attitudes toward animals which continue to dominate the majority opinion are based largely on the belief that these creatures exist to be used and exploited by the human species. In the United States, nonhuman animals are used in the agricultural, pharmaceutical/medical, cosmetic, fashion, and entertainment industries. Arguably, the use of nonhuman animals in these industries is not based on a form of necessity but rather on a careless notion of superiority. This superior notion serves to influence and regulate legislation designed towards the welfare of animals.

When discussing laws regarding the use and treatment of nonhuman animals in the United States, questions must be raised as to the intention and philosophy behind the promotion of these welfarist regulations. Why is it illegal to cause harm or suffering to a domestic animal such as a pet dog, yet at the same time legal for that species of animal to be used in biomedical and scientific experiments which expose the animal to extreme suffering and death? Why are there laws governing the care of animals used in medical and scientific experiments with respect to cage sizes, health, and diet, yet little regulation on what can be actually done to an animal in research?

These two questions begin to approach the heart of the issue that concerns human and nonhuman animal relations. An analysis of the current view of these relations as held by the public at large reveals

sion toward other creatures? Cohen claims that, "In our dealings with animals, as in our dealings with other human beings, we have obligations that do not arise from claims against us based on rights" (Cohen, p.106). He goes on to identify what he refers to as obligations, "In our dealings with animals few will deny that we are at least obliged to act humanely – that is, to treat them with the decency and concern that we owe, as sensitive human beings, to other sentient creatures" (p.106).

It is an interesting argument that says animals do not have the right to be free from suffering and therefore one can do anything to other species. Then at the same time saying that as humans we have an obligation to act humanely with compassion towards animals but that it is accepted that nonhuman animals be used in biomedical and scientific experimentation for the benefit of humans. Some of the argument is definitely believable, up to the point where as humans we have a moral and ethical obligation to act towards all with compassion and respect in a humane manner. But to then advocate using animals in testing procedures clearly disrupting lives, filling them full of torture and death, makes no sense. Yet this rationale makes up a large portion of the ethical and moral argument for the use of animals in experimentation.

In summary, the ethical and moral argument against the use of nonhuman animals in biomedical and scientific experimentation challenges the attempts at ethical justification by the research community. The same reasoning in current ideological practice regarding animal testing was used historically to justify testing on human beings once considered the others by the power majority. As humans we are relying on this same false reasoning to explain our ability to use others (now in the form of nonhuman animals) in continued testing. Furthermore, if the ethical and medical arguments against animal research are combined, a sound basis for the abolition of animal experimentation can readily be available.

the drug, had received some 1,600 warnings of health problems attributed to Thalidomide (then called Contergan) (Reusch, 1983, p. 360).

Ignoring the then negative results of testing this new drug on animals, it came out under a different name in 1961 by the British owned Distillers Company. Under the name Distaval, the Distillers Company marketed the drug with the assurance that, "Distaval can be given with complete safety to pregnant women and nursing mothers without adverse effect on mother or child" (1983, p. 360).

As a result of this carelessness, an estimated 10,000 children at least, were born throughout the world with severe deformities. Some of which included hands resembling fins attached directly to the shoulders, ear and eye deformities, missing lungs and/or limbs, genital deformities, and death shortly after birth. Even though thousands of animal tests had shown that Thalidomide was safe on other animals, when applied to the human body these disastrous results occurred.

Clioquinol is another example of a drug that was safety tested in animals and had a severely negative impact on humans. This drug, manufactured in Japan in the 1970s, was marketed as providing safe relief from diarrhea. Three drug manufacturers were found guilty in 1978 of selling drugs containing Clioquinol. Doctors who testified at the trial testified that Clioquinol "(sold under 168 different labels) was not merely useless against diarrhea, which it was advertised to heal, but that it could actually cause diarrhea when taken preventively, as the manufacturers recommended" (Reusch, 1979). As a result of Clioquinol being administered to the public, some 30,000 cases of blindness and/or paralysis and thousands of deaths were attributed to this drug.

Are these two examples just isolated cases? What about all of the important breakthroughs, as a result of animal research, that have provided aid to human health? When confronted with the issue of using nonhuman animals in scientific and medical experimentation, the research and health industry will often cite many of the same examples of remedies or cures for illness that have been found using animals. The claim is then made that if animal research is discontinued, it will be at the expense of human health and countless human lives.

Organizations now exist specifically to counteract the growing movement to end the use of animals in medical and scientific experimentation. One such organization, The Americans for Medical Progress, based in Alexandria, Virginia, lists on their webpage examples of positive breakthroughs found using animals in experimentation. The organization claims that without animal research,

> ~Polio would kill or cripple thousands of unvaccinated children and adults this year.
> ~Most of the nation's one million insulin-dependent diabetics wouldn't be insulin dependent – they would be dead
> ~60 million Americans would risk death from heart attack, stroke, or kidney failure from a lack of medication to control their high blood pressure.
> ~Doctors would have no chemotherapy to save 70% of children who now survive acute lymphocytic leukemia.
> ~More than one million Americans would lose vision in at least one eye this year because cataract surgery would be impossible.
> ~Hundreds of thousands of people disabled by strokes or by head or spinal cord injuries would not benefit from rehabilitation techniques.
> ~The more than 100,000 people with arthritis who each year receive hip replacements would walk only with great pain and difficulty or be confined to wheelchairs.
> ~7,500 newborns who contract jaundice each year would develop cerebral palsy, not preventable through photo therapy.
> ~There would be no kidney dialysis to extend the lives of thousands of patients with end-stage renal disease.
> ~Surgery of any type would be a painful, rare procedure without the development of modern anesthesia allowing artificially induced unconsciousness or local or general insensitivity to pain.

benefit. This does not rely on the idea that animals have rights (a human created notion disproved in the prior paragraph) but rather that as members of the human species there exists in us a portion of humanity that is inherently good. If touched upon, this could expose compassion and equal respect for all, humans, animals, and the environment we all share. This section of humanity which can and does exist without any formal ties to the love or view of animals, still is adequate ground for equal consideration and treatment based on that consideration.

The second notion that is often met with attempts at disapproval is that *animals can suffer.* Jeremy Bentham, an 18th Century philosopher was quoted saying in regards to animals, "The question is not, Can they reason? Nor can they talk? But, can they suffer?" (Fox, 1986, p. 47). Those opposed to the animal rights movements have long sought to disprove the argument that since animals can and do suffer they should remain free from human exploitation and torture.

Opponents to this line of reasoning, such as Carl Cohen author of The Case for the Use of Animals in Biomedical Research, argue that since the first notion of animal rights was disproved, that immediately invalidated the animal rights claim to suffering as a means for certain treatment. Cohen felt that since the notion of animal rights was already disproved, animals then did not have the right to be free from suffering. This translated into meaning that in Cohen's view humans could do anything to animals simply due to the nonexistence of any animal *right* for exclusion. Though this may be a clever argument, it nevertheless is lacking in any realistic, sound intellectual reasoning.

My point is illustrated in the example that many animal research facilities will boast about their outstanding treatment toward animals while at the same time torturing and killing them in laboratory experiments. Cohen feels that even though animals do not have the right to be free from suffering, "we are not morally free to do anything we please to animals" (Cohen, 1991, p. 105). This presents an interesting hypocrisy in itself. If the pro-animal research community feels it has disproved the notions that animals do not have rights and therefore do not have the right to be free from suffering, why then would Cohen and others argue that we should exercise some compas-

known as the longest test performed on humans in medical and scientific history. This was the Tuskegee syphilis study conducted in Macon County, Alabama beginning in 1932. In this study, untreated syphilis was examined in black males over a forty year time period. During these forty years the males were never told they had syphilis nor were they offered any form of treatment. The experiment, conducted by white scientists, was "working on the racist hypothesis that syphilis affected whites and blacks differently" (Spiegel, 64).

Today the biomedical research establishment continues to operate under the same false moral and ethical pretences in relation to animal experimentation as the barbaric practices occurring years ago to humans.

Proponents of primate experimentation or of animal research in general often make attempts at disproving the ethical base on which the anti-vivisectionist movement sits. These attempts largely focus around invalidating two notions that the research community feel are at the heart of the broad animal rights movement. Once these two notions are disproved, opponents to the animals rights philosophy feel it will put the issue to rest entirely.

The first notion that the supporters of animal research work to disprove is the perception that *animals have rights.* This is an idea accepted by many in the animal welfare movement to be a sound argument. *Animals have rights and therefore should receive equal consideration by humans.* Opponents argue that animals do not have rights on their own. In fact, many will put forth that the entire notion of the term *rights* is a human created idea that cannot be placed upon another creature. Although what many individuals may mean when they say *animal rights* may be remarkably similar to something animals have or feel, it is not the same as the human idea or has yet to be proved as such. I agree with this argument made by the pro-vivisection side.

The problem arises then when, after the opponents of animal rights disprove the notion of *rights*, the perception is that this gives proper justification for the continued exploitation and mistreatment of nonhuman species. I would argue that there exists no realistic justification for our continued use of non-human animals purely for human

> ~Instead of being eradicated, smallpox would continue unchecked and many others would join the two million people already killed by the disease (AMP, 1998).

The Americans for Medical Progress lists their mission as "helping the public understand animal research in medicine" (AMP, 1998). By this goal one would think of the organization as providing both the pro's and con's of animal research to give the public a full rounded exposure to the issue. Yet all that is present is the listing of breakthroughs thanks to animals research.

So are all of these claims made by the Americans for Medical Progress true? To begin to look at these issues individually it is helpful to state that this same list of examples demonstrating the important role of animal research can be heard throughout institutions across the United States, from colleges and universities to other public and private biomedical and scientific research locations. How does one begin to take an objective view toward finding where the truth actually sits in regard to the cited example's claim to animal research?

What one must begin to do is something individuals on both sides of the issue tend to look over and dismiss. Extensive and careful research must be done to begin to get to the bottom of this dispute. To do this research naturally both sides must be questioned intensely on their position and supporting documentation. The Americans for Medical Progress are guilty of the same lack of academic documentation that plagues both sides of the issue. Nowhere on their webpage are there any sources that list where their supporting statements came from. One could just as easily create a webpage listing the same examples with the claim that each was found without the use of animals entirely. Who would know which were correct since neither would have sources for the public to examine and decide upon? Unfortunately this happens, as previously stated, on both sides of the issue in various forms, be it book, magazine, webpage, etc.

Attempting to exercise as much academic integrity as possible, I found that the only real way to get to the bottom of much of this debate is to as an individual conduct my own research on the subject. What I have found so far at the time of this writing is that there are

extreme problems associated with placing implicit trust in those experts simply due to their white lab coats. Here are some brief summaries of documentation I have located contrary to the claims by the biomedical and scientific establishment. The summaries are followed by sources where further information may be found.

Beginning with the issue of surgical anesthesia, credit for discovering and implementing the first surgical anesthetic belongs to an individual named Crawford Williamson Long. Long first successfully used ether as an anesthetic on March 30, 1842.

As the story goes, Long lived in a time period in the United States when "Ether Parties" and "laughing gas demonstrations" were extremely popular as forms of entertainment (Boland, 1950, p.31). Long, who attended many of these parties during his educational career made the landmark observation that while many of his colleagues inhaled ether, they seemed to be oblivious to the fact that they would occasionally hurt themselves. Long "saw that his friends, while etherized, often fell to the floor with a thud that should have hurt them badly" (Robinson, 1946, p. 86). Long then transformed this observation into a more practical use in surgery.

Long's first trial with ether was on a patient by the name of James Venable who had a tumor on the back of his neck. Here is an excerpt from Long's own account of what occurred,

> The ether was given to Mr. Venable on a towel; and when fully under the influence, I extirpated the tumor. It was encysted, and about a half inch in diameter. The patient continued to inhale ether during the time of the operation; and when informed it was over, seemed incredulous, until the tumor was shown him.
>
> He gave no evidence of suffering during the operation, and assured me, when it was over, that he did not suffer the slightest degree of pain from its performance (Robinson, 1946, p. 90).

This discovery, the knowledge of the effects of ether and the reality of anesthesia, was accomplished without the use of animals. Animal experimentation only came into the picture after this fundamental

form. With this reasoning, the main question that must be asked is how do humans know that they are the last in the evolutionary line? How can humans be certain that nothing will come after them? In this sense, the human situation is precisely like the jellyfish mistakenly viewing the world as its own.

Diving further into the matter of speciesism, it becomes relevant to discuss the line of division model. This model clearly illustrates the hypocrisy existing in continuing to view the world in terms of *man's dominion*. Years ago, white men were considered the rulers of the world. For the most part women and other races of people were seen as insuperior and therefore could be used by white men. Women and African American people, to name just two examples, were considered property of the white man, to be bought and sold as a piece of land or machinery. The line of division at this point separated the white man from all others, naming them as subordinate people and beings subject to any use of those in power. These uses included slavery, prostitution, and experimentation, to name a few.

Marjorie Spiegel, in her startling book, The Dreaded Comparison, confronts the relationship between historical vivisection on humans and current experimentation practices on nonhuman animals. She cites Dr. Mosely who in 1787 published Treatise on Tropical Diseases. In this Mosely writes,

> Negroes...are void of sensibility to a surprising degree. They are not subject to nervous diseases. They sleep sound in every disease, nor does any mental disturbance ever keep them awake. They bear chirurgical operations much better than white people, and what would be the cause of unsupportable pain to a white man, a Negro would almost disregard (Spiegel, 1988, p. 60).

This reasoning based on a false perception of superiority allowed the white male to use African Americans in experimentation.

"At a rally in San Francisco protesting the use of animals in research, Alameda County supervisor John George said, 'My people were the first laboratory animals in America" (Spiegel, p. 61). Indeed they were as Spiegel points out describing another study widely

Based on the above two notions, Singer felt that it was universally held that the welfare of humans be placed in front of nonhuman animals. He cited the examples of hunting, entertainment, farming, and experimentation as areas where this principle could be found. Singer rejected this principle and argued quite the opposite, "that the combination of the two principles cannot be defended within the terms of any convincing nonreligious approach to ethics" (1980).

Among his other beneficial contributions to the movement, Singer coined the term *speciesism* which refers to "a belief that different species of animals are significantly different from one another in their capacities to feel pleasure and pain and live an autonomous existence, usually involving the idea that one's own species has the right to rule and use others" (Spiegel, 1988, p. 7).

Daniel Quinn, in his book Ishmael, illustrates the idea of speciesism. He tells the story of an anthropologist who, some half a billion years ago, studied a jellyfish living in shallow waters off the coast. After conversing for a bit attempting to comprehend the nature of the jellyfish, the anthropologist asked the jellyfish for its creation myth. The jellyfish replied that it did not have a *creation myth.* The anthropologist then asked if the jellyfish could recite its story of how things can to be the way they were. The jellyfish replied that it had a story but it sure was no myth. So the jellyfish proceeded to tell the anthropologist its story of creation. According to the jellyfish, it all began some ten or fifteen million years ago with the birth of the universe. Our own solar system perhaps came into being some two or three billion years ago. Then after another billion years life appeared with microorganisms. Slowly life evolved and single cell creatures, algae, and polyps appeared. "'But finally,' the creature said, turning quite pink with pride as he came to the climax of his story, "but finally *jellyfish appeared"* (Quinn, 1992, pp. 55-56).

In the story, the jellyfish was the creature for which the world was specifically made. Therefore the jellyfish could do whatever it wanted to others and the world since it was a higher life form. The story obviously mocks the current perception humans have of their domination over other species and the environment. Yet, many would not see this as a valid comparison since the jellyfish is a lower life

insight already existed.

Sources: Boland, F. K., (1950). The first anesthetic: The story of Crawford Long. Athens: University of Georgia Press.

Keys, T. E., (1963). The history of surgical anesthesia. New York: Dover Publications, Inc.

Raper, H. R., (1945). Man against pain: The epic of anesthesia. New York: Prentice Hall Inc.

Robinson, V., (1946). Victory over pain: A history of anesthesia. New York: Henry Schuman.

The discovery of the polio vaccine is still one of the most commonly cited justifications for the continued use of nonhuman animals in experimentation. Two individuals by the names of Salk and Sabin are credited with the development of vaccines to combat poliomyelitis (polio). Yet in the medical industry itself, there is a visible dispute as to the means by which the development of the polio vaccine occurred and whether or not it even played a major role in stopping the virus.

In 1936, Peter Olitsky and Albert Sabin for the first time cultivated poliovirus using human embryonic nervous tissue in test tube cultures. Yet, Olitsky and Sabin were highly skeptical that the tissue culture methods could produce enough quantities of the poliovirus to make a vaccine.

In 1949 the team of Dr. John Enders, Dr. Thomas H. Weller and Dr. Frederick C. Robbins demonstrated that Olitsky and Sabin's skepticism was wrong. They proved for the first time that it was possible to grow poliovirus in laboratory cultures of non-nervous-system human tissue. This achievement won them the nobel prize in 1954. Yet, though the information was there Enders, Weller, and Robbins stopped just short of creating the polio vaccine that would be released to the public.

Around the same year Enders, Weller, and Robbins won the nobel prize, Jonas Salk put forth his polio vaccine into large scale clinical trials. Three years later Sabin introduced another polio vaccine that also underwent immediate testing. Both Salk and Sabin used

monkeys to produce their vaccines despite evidence of better alternatives supplied by Enders, Weller, and Robbins. It was unknown at this time that viruses commonly found in monkey kidney cells are now known to cause cancer in humans.

In 1972, Dr. Leonard Hayflick, professor of Microbiology at Stanford University wrote,

> Vaccines against human viruses are mostly produced on monkey kidneys and on cultures of chicken embryos; both may be contaminated. Several people have died as a result of handling monkeys or their cultured cells. A substantial number (25 to 80 percent) of monkey kidneys processed for vaccine manufacture must be discarded because of extensive contamination with one or more of 20 known viruses. The annual slaughter of monkeys for primary cultures has reached such proportions that several species are endangered. At least several hundred thousand people in the U.S. have been inoculated with live SV-40 virus found in polio vaccines produced in monkey kidney cells. This SV-40 virus produces tumors in hamsters and converts normal human cells to cancer in vitro (Reusch, 1983, p. 376).

The ongoing polio controversy has become so intense at times that it is amazing the biomedical research establishment continues to use it as an example of successful animal research. Some critics even point to the polio vaccine as a major cause of polio itself.

In 1984, Professor Robert S. Mendelson wrote in The People's Doctor, a medical newsletter targeting consumers, "I gave up on the polio vaccine when Jonas Salk showed that the best way to catch polio in the United States was to be near a child who recently had taken the Sabin vaccine" (Vol. 8, No. 12). This statement was further supported in public with the statement made by Bill Curry, a staff writer with the Los Angeles Times in an article entitled Polio War – Renewed Controversy, "In the United States today the only cause of polio is the oral polio vaccine routinely administered to infants in society's drive to rid the nation of the disease" (L.A. Times, June 1,

ETHICAL ARGUMENTS AGAINST NONHUMAN ANIMAL EXPERIMENTATION

The moral and ethical arguments against the use of nonhuman animals in biomedical and scientific experimentation are extremely challenging to the research industry. A common justification given for the continued use of animals in research is *they are so like us*. Yet at the same time, researchers claim we are able to test on animals because *they are not like us*. This presents a certain level of hypocrisy which when exposed leaves little room for rebuttal from the pro-animal research community.

Prior to the 1970's the animal advocacy movement was largely concerned with the welfare of animals. In 1975, Peter Singer's book, Animal Liberation, changed the way much of the world would look upon the human treatment of other animals. In his book, Singer argued that the animal welfare movement was focused on the well-being of animals as they continued to be used in industries such as agriculture and medical research. He rejected the notion that animals are simply here on earth for the benefit of humankind. Rather, Singer argued that there is no philosophical or moral basis for the human use of animals. He called for a movement based on the idea of animal liberation, a complete re-evaluation of how we use animals in our daily lives.

Singer discussed the idea of suffering as a means for disproving the claim of human superiority. In an essay published in Behavioral and Brain Sciences, Singer argued that there is "no rational ethical justification for always putting human suffering ahead of that of nonhuman animals" (Singer, 1980). He based this notion on his realization that,

> Many people accept the following moral principles:
>
> 1. All humans are equal in moral status.
> 2. All humans are of superior moral status to nonhuman animals.

happen to research on AIDS, Cancer, and Heart Disease if animal experimentation comes to a complete halt? This will mean that the enormous chunk of the federal budget that is spent on animal experimentation, well over $5 billion per year by the National Institutes of Health alone, could be placed into prevention and most importantly clinical research which actually has a chance in progressing human health advancements.

1985).

On a more current note, Deborah Blum in her 1994 book, The Monkey Wars, wrote, "In the late 1980s, scientists tracking the life histories of 59,000 pregnant women all vaccinated with the Salk polio vaccine, found that their offspring had a 13 times higher rate of brain tumors than those who did not receive the vaccine" (P. 229).

The polio vaccine controversy becomes even more distorted when statistics of the rate of polio infection are discussed. In Tennessee, the number of people with polio the year before the vaccine was introduced was 119. That number rose to 386 the year the vaccine was introduced. In North Carolina, the number of people infected with polio the year before the introduction of the vaccine was 78 while 313 cases were reported the next year (Coleman, 1991, pp. 64-65). Why would the number of polio cases rise after the vaccine was introduced? What then is to account for the decline in the infection rates of the polio virus?

According to Reusch, "All the medical historians of our century, from Henry Sigerist to Brian Inglis, from Rene Dubos to Beddow Bayly to Ivan Illich, agree that the decline of the epidemics which had wrought havoc was not due to the introduction of vaccination but of hygiene, for they diminished before large scale inoculations had begun" (1983, p. 194). Many historians believe that the decline in cases of polio was attributed to these types of factors: hygiene, and societal cleanliness.

The claim that the polio vaccine was developed through the use of animal experimentation is not only misleading but is largely untrue. Furthermore, as far as the benefits are concerned there is ample amount of evidence demonstrating the harmful effects the polio vaccine had on human health. Yet, our educational systems in addition to the scientific and medical industry continue to instill in the public mind that the polio vaccine found through animal research has saved the lives of millions.

Sources:

Coleman, V., (1991). Why animal experiments must stop and how you can stop them. England: European Medical Journal.

Fadali, M. A., (1996). Animal experimenta-

tion: A harvest of shame . Los Angeles: Hidden Springs Press.

Reusch, H., (1983) . Slaughter of the innocent . New York: Civitas Publications.

Smith, J. S., (1990) . Patenting the sun: Polio and the Salk vaccine . New York: William Morrow and Company, Inc.

Hip replacement is another area boasted about by the medical industry as technology found through animal research. The first total hip replacement was introduced by Philip Wiles in 1938. The replacement consisted of stainless steel components held together by screws and bolts. These first replacements, duplicated shortly after by Haboush and McKee, often became loose when the patient began walking again.

John Charnley, after observing these hip replacements became convinced that the problem with them largely stemmed from a lack of lubrication. In 1958, after seeking a material which would self lubricate, Charney attempted his first hip replacement using one made with polytetrafluorethylene (Teflon). The results of the first few replacements were judged successful as they appeared to relieve pain and provide easier movement for the patients. Unfortunately after 12-18 months the hip replacements began deteriorating with the plastic flaking off into the joint creating a massive irritation. Documentation exists giving proof that here animal research delayed the progress of hip replacements. "It was found that the plastic shed off into the joint began to cause an irritation of the joint lining to produce a boggy swelling of the joint. This phenomenon could not be predicted because material that had been implanted into experimental animals had failed to produce any local reaction" (Hardinge, 1983, p. 30).

Charney went on to successfully develop an improved replacement containing high density polyethylene which proved much stronger than the previous model. To date, well over 2,000,000 hip replacements have been performed with Charney's improved model developed without animal experimentation.

Sources:

Hardinge, K., (1983) . Hip replacement; the

ences means also coming to terms with the realization that animals not only react differently than humans to different drugs, vaccines, and experiments, but they also react differently from one another. This makes for an extremely difficult argument by the medical industry as to the validity of animal experimentation.

Growing up in the United States, I too was socialized into believing in cultural experts. *Leave the important issues in the hands of the professionals*, was a common phrase that continues to be recited to this day. While there may be some honesty in that statement, it leaves the public at large extremely ignorant of important issues such as animal experimentation.

For years there have been organizations tackling the issue of animal research from a purely moral standpoint. These views are discussed in the section on ethics and morality. This was partly due to the fact that many people still placed implicit trust in the medical establishment's viewpoint that animal research is needed and has resulted in wonderful breakthroughs for human health. Many individuals and organizations would not and still do not discuss the medical and scientific side of the issue as they feel that some benefit has come from animal experimentation. Therefore the commonly held perception is that animal research may be valid, but it still is unethical and immoral.

My challenge to this viewpoint is based upon not only the six examples I listed previously, advances supposedly from animal research that were not, but also many others including AIDS research, cancer studies, antibiotics, drug & alcohol research, and much more. Proof can easily be found in local, university, and larger governmental libraries.

But in the six examples I have listed here, there again is a great amount of evidence demonstrating the invalidity of animal based studies and the extent to which the medical research establishment will go in order to keep the issue in the hands of the experts.

Clearly the sound argument against animal experimentation contains both the medical/scientific and the moral/ethical issues. Not only is animal research a fraudulent means of scientific research, but it is immoral as well. Which leads back to the question of what will

duced which would lead to the eventual annihilation of smallpox on the planet. Again, this insight came well before the massive amounts of animal experimentation began.

Sources: Fadali, M. A., (1996). animal experimentation: A harvest of shame. Los Angeles: Hidden Springs Press.

Fenner, F., Henderson, D. A., Arita, I., Jezek, Z., & Ladnyi, I. D., (1988). Smallpox and its eradication. Geneva: World Health Organization.

Frauenthal, J. C., (1944). Smallpox: When should routine vaccination be discontinued?. Boston: Birkhauser.

Jenner, E., (1801). The origin of the vaccine inoculation. London: D.N. Shury.

In the previous six examples, clear evidence is shown supported with rich documentation that what the Americans for Medical Progress claim on their website is not completely true. Furthermore, when the realization is made that it is not just the Americans for Medical Progress who are making these false claims but enormous sections of the biomedical and scientific industry, it leads one to question all of the claims to medical advancement by way of animal experimentation.

The closest relative to the human species is the chimpanzee. It shares 94.7 percent of the same DNA and in fact the chimpanzee is closer to humans than to any other species. But as close as the two species may be to one another, is it really close enough to trust extrapolating scientific results from the chimpanzee for use in humans?

The Nature of Wellness Foundation takes a firm stand on this question explaining the important differences that exists between species. In a February 1997 advertisement appearing in Scientific American, the organization wrote, "Every species of animal is a different biomechanical and biochemical entity. Non-human animals are different not only from humans, but also from each other anatomically, physiologically, immunologically, genetically, and histologically (down to the basic cellular structure)." Acknowledging these differ-

facts. Oxford: Oxford University Press.

In the case of diabetes, credit for the knowledge that the disease was caused by damage to the liver goes to Claude Bernard who is commonly referred to as the father of experimental physiology. Unfortunately, Bernard's findings were incorrect and it was an individual by the name of Thomas Crawley in 1788 who established the relationship between pancreas damage and diabetes. By conducting a number of autopsies on diabetics, Crawley observed similarities in that each had a damaged pancreas. Thus, the connection was made.

Around the globe, the race was then on between scientists to "extract the substance from the pancreas which controls blood sugar: insulin" (Fadali, 1996, p. 125). In 1920, an individual in Toronto by the name of Frederick Banting led a team of researchers to success. But Bantings knowledge of the subject was taken directly from Dr. M. Barron in an article entitled, The Relation of the Islets of Langerhans to Diabetes with the Special Reference to Cases of Pancreatic Lithiasis (Barron, 1920, pp. 437-438).

In this article, Barron describes how he came to the conclusion that damage to the Islets of Langerhans causes diabetes in humans. Barron came to this conclusion as a result of studying the human pancreas and concluded that insulin could be derived from an extract of the Islets of Langerhans.

Back in Toronto, Banting took what he had learned from Barron and created the first extract that contained insulin. Along with his partners, MacLeod and Best, Banting won the nobel prize for the discovery of insulin. Yet the real credit needs to be given to Barron who first obtained the knowledge which educated Banting without any animal experimentation.

Like many other drugs, the effectiveness of insulin continues to be exceptionally controversial. Insulin, being far from a cure for diabetes, works to regulate blood sugar level thereby helping to prevent complications from high blood sugar level and alterations in the alkaline state of the blood. Insulin does not protect the kidneys, eyes, or blood vessels of diabetics.

An estimated 11 million people in the United States have

diabetes and it continues to be in the top five causes of death nationally. Reusch argues that the cause of diabetes is already well known but rarely acted upon. He looks at diet as being the major contributing factor.

> The highest incidence of diabetes is in the United States, where the mortality from it is rising and has recently reached 27.7 per 100,000 inhabitants; the lowest in Japan, where mortality is only 2.4 per 100,000. And the Japanese diet contains on average 5 percent animal fats and meat, the American 35 percent. When Japanese take on American eating habits, they develop the same diabetic trouble (Reusch, 1983, p. 224).

Admittedly, Reusch's statistics are somewhat dated but the result today remains the same. A nutritional diet low in meat and animal fats can not only prevent diabetes, but also improve the lives of diabetics without insulin.

Sources:

Barron, M., (1920, November 5). Relations of the Islets of Langerhans to Diabetes with a special reference to cases of pancreatic lithiasis. Surgery, Gynecology, and Obstetrics, XXXI, pp. 437-438.

Bliss, M., (1982). The discovery of insulin. Chicago: University of Chicago Press.

Fadali, M. A., (1996). Animal experimentation; A harvest of shame. Los Angeles: Hidden Springs Press.

Reusch, H., (1983). Slaughter of the innocent. New York: Civitas Publications.

The medical research industry and groups such as the Americans for Medical Progress claim that animal experimentation is responsible for saving the lives of millions who suffer from heart disease high blood pressure. Yet digitalis continues to be the most useful heart drug today.

William Withering, an English botanist and physician discovered digitalis in 1785. After observing that dried leaves of the foxglove flower had been used by people for dropsy remedy, Withering tested the same leaves on patients with heart failure. The success was so magnificent that it continues to be boasted about today. "There is no more valuable remedy today for lowering ventricular rate in cases of heart disorder now called auricular fibrillation" (Reusch, 1983, p. 160).

It should be noted also that high blood pressure and hypertension can be at least partly controlled with proper stress reduction techniques, a healthy diet, adequate rest, weight loss, and exercise.

Sources:

Coleman, V., (1991). Why animal experiments must stop and how you can help stop them. England: European Medical Journal.

Fadali, M. A., (1996). Animal experimentation: A harvest of shame. Los Angeles: Hidden Springs Press.

Lewis, T., (1934). Clinical Science. University College Hospital, London: Shaw and Sons, Ltd.

Reusch, H., (1983). Slaughter of the innocent. New York: Civitas Publications.

Warren, J. V., & Genell, J. S., (1986). Managing Hypertension. New York: Doubleday & Company.

Smallpox is another area of concern is which its eradication is commonly attributed to animal studies. In May, 1980, World Health Organization officials in Geneva announced the end of smallpox on the planet. Yet the fundamental knowledge that led to creating wide scale vaccination was derived from a simple human to human observation.

Edward Jenner, an English physician, observed in the eighteenth century that women who worked around cows did not usually obtain smallpox. He came to the conclusion that the reason the women were not contracting smallpox was that they were getting a mild form of cowpox. This cowpox provided an immunity to smallpox while at the same time producing no other significant negative symptoms.

Using this fundamental knowledge vaccines were then pro-